CA

6

The oxidation of $CuSO_3.Cu_2SO_3.2H_2O$ to $CuSO_4$. Va. M. Pesin and M. L. Shabashova (Leningrad Technol. Inst.). *Zhur. Prikład. Khim.* (J. Applied Chem.) 23, 350–6(1950).—The formation of H_2SO_4 in the passage of a mixt. of SO_2 (7%) and air through a soln. of $CuSO_4$ (0.26 and 2.31% Cu) at 60 and 80° is retarded as H_2SO_4 accumulates in the soln., owing to formation of $CuSO_4.Cu_2SO_3.2H_2O$ (I). The soly. of that salt, in H_2O and in 10, 20, and 30% $CuSO_4.5H_2O$, was detd., at 25°, to be 0.042, 0.088, 0.096, and 0.100 wt. %, and at 60°, to be 0.140, 0.312, 0.334, and 0.379 wt. %. The increase of the soly. with increasing $CuSO_4$ content of the soln. is distinct, but not sufficient to make practical the process of extn. of Cu by passing SO_2 gas into a $CuSO_4$ soln. The extn. can be effected by oxidation of I to $CuSO_4$. In an aq. suspension of 4 g. I in 100 ml. H_2O, passage of air at 90–5° produced a solid phase of the empirical compn. $2CuO.CuSO_4.2H_2O$ (or $2Cu(OH)_2.CuSO_4$) and a soln. with the mol. ratio Cu:S = 1. The process, consequently, is $2I + 3O_2 = 2Cu(OH)_2.CuSO_4 + 3CuSO_4 + 2H_2O$. In a 10% H_2SO_4 soln., all of the I was converted to $CuSO_4$. Complete oxidation of I and its soln. in the form of $CuSO_4$ was obtained by passing a mixt. of SO_2 with excess O_2 (air), the overall reaction being $I + SO_2 + 2O_2 = 3CuSO_4 + 2H_2O$. The rate of oxidation of I increases with the O_2 content in the gas and with the $CuSO_4$ content of the soln.; Cu^{++} ions catalyze the oxidation $2SO_2 + O_2 + 2H_2O = 2H_2SO_4$.

N. Thon

CA

18

Production of copper sulfate from copper oxide and gases containing sulfur dioxide and oxygen. Va. M. Pesin and M. L. Shalmashova (Leningrad Technol. Inst.). *Zhur. Prikład. Khim.* (J. Applied Chem.) 23, 460–9 (1950).—The practical possibility of extn. of Cu, in the form of $CuSO_4$ in soln., from CuO, by contact with SO_2 + O_2, was demonstrated with 3 kinds of CuO, one prepd. by oxidation of Cu_2O at 500–600° (79.8% Cu), the 2nd by oxidation of Cu powder with iron scrap (79.96% Cu), a 3rd by oxidation of Cu at 600–700° (80.2% Cu). With a gas contg. 7% SO_2, passed at the rate of 10 l./hr. at 85–95°, extn. of Cu was complete with all 3 samples; e.g., with the 3rd sample, after 0, 60, 120, and 180 min., the $CuSO_4.5H_2O$ content of the soln. was 9.58, 12.79, 16.41, and 17.99%, the degree of extn. of Cu from CuO, 0, 38.3, 81.3, and 100%, free H_2SO_4, 0, 0.34, 0.22, and 0.10%. The solid phase, originally CuO, undergoes visible changes before it is dissolved. By analyses and x-ray examn., the solid phase is a mixt. of Cu_2O and $CuSO_4.Cu_2SO_4.2H_2O$ (I), the amt. of the latter increasing with time. As an example, after 0, 20, 40, and 60 min., the compn. of the solid phase (CuO, Cu_2O, I) was: 100, 0, 0; 0, 61.93, 38.12; 0, 32.5, 69.06; and 0, 2.89, 97.66%. The 1st product of the reaction between SO_2 and CuO is I which, in H_2O, reacts further along $3I + 15CuO \rightarrow 6CuSO_4 + 9Cu_2O$ + water; the oxidation of I proceeds according to $I + SO_2 + 2O_2 = 3CuSO_4 + 2H_2O$. The overall process involves, simultaneously, direct soln. of CuO in the H_2SO_4 formed by oxidation of SO_2 to SO_3 in the presence of Cu^{++} ions, and formation of I which is further converted to $CuSO_4$. The latter is produced about 2 to 3 times as fast as in the absence of Cu^{++} ions. The tech. process can be conducted with gases contg. as low as 1–4% SO_2, provided the O_2 content is high enough to give a vol. ratio O_2:SO_2 not below 4. The coeff. of utilization of Cu is 94–7%.

N. Thon

YAK METS, Ye.M.; TANANAYEVA, A.I.; SHABALINOVA, N.V.

Rapid trilonometric determination of zinc in copper-containing materials. Trudy Ural.politekh.inst. no.130:58-61 '63. (MIRA 17:10)

NIKITIN, V.D.; YAKIMETS, Ya.M.; TIMAKOVA, N.A.; RAL'KO, V.A.; SHABASHOVA, N.V.; TRIBUNSKIY, V.V.

Preparing chelate compounds of ethlenediaminetetraacetic acid with the cations of certain metals and methods of their analysis. Trudy Ural.politekh.inst. no.130:94-103 '63. (MIRA 17:10)

KAUFMAN, B.D.; MIROTVORTSEVA, K.S.; PETROVA, M.M.; SHABASHOVA, N.Ya.

Methodology of the study of late results of the treatment of patients with malignant tumors. Vop. onk. 11 no.1:59-67 '65. (MIRA 18:6)

1. Iz Orgmetodotdela (ispolnyayushchiy obyazannosti zaveduyushchego - B.D.Kaufman) Instituta onkologii AMN SSSR (dir. - deystvitel'nyy chlen AMN SSSR prof. A.I.Serebrov).

ABRAKOV, L.V.; BARANOVA, A.G.; DYMARSKIY, L.Yu.; DYAD'KOVA, A.M.; RABKOVA, L.M.; RAKOV, A.I.; SEREBROV, A.I.; SMIRNOVA, I.N.; KHOLDIN, S.A.; TSEL', Ye.A.; CHEKHARINA, Ye.A.; SHABASHOVA, N.Ya.; SHANIN, A.P.

Reviews. Vop. onk. 11 no.7:116-126 '65. (MIRA 18:9)

AL'BENSKIY, A.V.

SHABASHOVA, N. Ya., Cand Med Sci -- (diss) "Development of domestic (U.S.S.R.) [Russian] surgery according to data obtained contained in 'Voyenno-meditsinskiy zhurnal' [Military Medical Journal] ((1823-1885)." Len, 1958. 22 pp (Len State Order of Lenin Inst for Advanced Training of Physicians im S. M. Kirov, Len Oblast' Department of Health), 200 copies (KL, 17-58, 112)

SHABASHOVA, N.Ya.

Works of Russian surgeons published in the Military Medical Journal 1825-1885. Vest.khir. 80 no.3:148-153 Mr '58. (MIRA 11:4)

1. Iz Lomonosovskogo meditsinskogo uchilishcha (dir. A.V.Syromyatnikova)

(HISTORY, MEDICAL
in Russia (Rus))

KANDELIS, B.L.; SHABASHOVA, N.Ya.

Acute appendicitis and rupture of the ovary. Akush.i gin. 37 no.1:107-108 '61. (MIRA 14:6)

1. I-y gorodskoy bol'nitsy (glavnyy vrach K.A. Pozdiyakov) Vasileostrovskogo rayona Leningrada.
(APPENDCITIS) (OVARIES--RUPTURE)

33463
S/129/62/000/001/006/011
E073/E483

18.1120

AUTHORS: Shteynberg, M.M., Doctor of Technical Sciences, Professor; Sabun, L.B., Engineer and Shabashova, T.S.

TITLE: Influence of thermomechanical treatment on cutting-edge stability and toughness of high-speed cutting steels

PERIODICAL: Metallovedeniye i termicheskaya obrabotka metallov, no.1, 1962, 29-30 and 35-37 + 1 plate

TEXT: The influence of thermomechanical treatment on the properties of high-speed cutting steels has been little investigated. Therefore, the authors studied this problem on heats produced in a 30 kg capacity high-frequency furnace. The chemical compositions of the investigated steels were as follows (%)

	C	W	Cr	V	Mo	Co
Р9 (R9)	0.87	9.2	4.0	2.10	0.20	-
Р18 (R18)	0.80	18.1	4.2	1.20	0.20	-
Р9К5 (R9K5)	0.80	10.2	4.03	1.76	0.16	4.68
Р9К10 (R9K10)	0.82	8.6	4.0	1.84	0.11	10.24

Card 1/4

Influence of thermomechanical ...

The ingots were forged into 15 x 15 mm rods, which were subjected to thermomechanical treatment. The austenizing temperature was 1270°C for steel R18 and 1250°C for other materials. Preliminary heating was in a salt bath at 860°C and the austenite was supercooled to the desired temperature in a saltpetre bath. Plastic deformation (5 to 30% reduction) was by forging in a test rig which ensured that the cross-section of the blank remained square. The blank was hit along two adjacent sides and following that it was oil-quenched. The same heat-treatment was applied simultaneously to pilot specimens not subjected to plastic deformation. In addition to investigating the cutting properties, hot hardness, toughness and structure, magnetometric investigations were carried out on the steel R9. It was found that thermomechanical treatment increased the service life of cutting edges of the steels R9 and R18 but had little effect on the performance of cutting edges of Co-containing high-speed steels. The effect of thermomechanical treatment was most pronounced in material deformed at 400°C. The actual increase in service life for a reduction of 15% was as follows:

Influence of thermomechanical ...

Deformation temperature, °C	Increase (or decrease) in service life, %
197	-8
170	-12
228	8
228	8
229	8
228	8
251	20

The curve illustrating the relationship between the service life of a cutting edge and the degree of plastic deformation given to steel during thermomechanical treatment has a maximum; for the deformation range studied the highest service life of the cutting edge was obtained in the case of 15% reduction. Thermomechanical treatment does not appreciably influence hot hardness. The increased service life was attributed to increased wear-resistance

Card 3/4

Influence of thermomechanical ...

of the cutting edge; this increase was most pronounced when cutting materials of high hardness; practically no increase in service life was observed in machining austenitic steels. The thermomechanical treatment improved appreciably toughness of steel in static bending; it also brought about refinement of the martensite grain and formation of a texture. Magnetometric tests have shown that on increasing the reduction from 5 to 20 - 30%, the martensitic point for the residual austenite during tempering is depressed 20 to 30°C below that for undeformed steel. The thermomechanical treatment had little influence on the completeness of the transformation of the residual austenite during tempering. There are 5 figures, 4 tables and 9 references: 7 Soviet-bloc and 2 non-Soviet-bloc. The two references to English language publications read as follows: Ref.1: D.J.Schmatz, J.C.Shyne, V.F.Zackay. Metal Progress, v.76, no.3, 1959;
Ref.8: R.F.Harvey. Steel, v.147, 1960.

ASSOCIATION: Ural'skiy politekhnicheskiy institut
(Ural Polytechnical Institute)
Uralmashzavod

SHABASHOVA, N. Ya.

Surgical treatment of tumors in Russia; according to data of the Voenno-meditsinskii zhurnal from 1823 to 1885. Vop. onk. 8 no.2: 112-117 '62. (MIRA 15:2)

1. Iz orgmetodotdela (zav. - st. nauchn. sotr. A. V. Chaklin) Instituta onkologii AMN SSSR (dir. - deystv. chl. AMN SSSR, prof. A. I. Serebrov).

(ONCOLOGY)

KHOLDIN, S.A., prof., otv. red.; RAKOV, A.I., prof., red.; LAZAREV, N.V., zasl. deyatel' nauki prof., red.; TOBILEVICH, V.P., prof., red.; NECHAYEVA, I.D., doktor med. nauk, red., KAUFMAN, B.D., kand. med. nauk, red.; SHABASHOVA, N.Ya., kand. med. nauk, red.; PETROV, A.N., red.

[Current problems of oncology; festschrift for the 70th birthday and the 45th anniversary of the scientific and civic activity of Member of the Academy of Medical Sciences of the U.S.S.R. Professor Aleksandr Ivanovich Serebrov, and consisting of papers by his students and coworkers, as well as by distinguished scientists in the field of cancer control] Sovremennye problemy onkologii; sbornik posviashchen 70-letiiu so dnia rozhdeniia i 45-letiiu nauchnoi i obshchestvennoi deiatel'nosti deistv. chl. AMN SSSR professora Aleksandra Ivanovich Serebrova i sostoit iz rabot ego uchenikov i sotrudnikov, a takzhe vidnykh uchenykh - soratnikov po protivorakovoi bor'be. Leningrad, Meditsina, 1965. 245 p. (MIRA 18:6)

1. Akademiya meditsinskikh nauk SSSR, Moscow. Institut onkologii. 2. Chlen-korrespondent AMN SSSR (for Kholdin, Rakov).

SHABASOVA, Ye.

Six vocations are not a limit. Prom.koop. 13 no.8:9 Ag '59. (MIRA 12:12)

1. Rabotnitsa galanterevnogo tsekha leningradskoy artoli "Progress"; deputat Yablonovskogo sel'soveta Vsevolozhskogo rayona.
(Women--Employment)

KUDRYAVTSEVA, F.A.; SHABASHOVA, Z.N.; GOLUBEVA, Kh.A.; YABLOKOVA, Z.I.; MOROZOV, P.A.; SOLOV'YEVA, A.G.

Using direct white dyes for the finishing of underewear cotton fabrics. Tekst.prom. 21 no.9:57 S '61. (MIRA 14:10)
(Cotton finishing)

33635
S/042/62/017/001/005/005
B1 :/B108

16.3400

AUTHOR: Shabat, A. B.

TITLE: Boundary value problems with a small parameter for ordinary linear differential equations

PERIODICAL: Uspekhi matematicheskikh nauk, v. 17, no. 1 (103), 1962, 235-241

TEXT: The author considers solutions $u^\varepsilon(x)$ of the boundary value problem A :

$$L_\varepsilon u^\varepsilon(x)=\sum_{j=1}^{l}\varepsilon^j a_{k+j}(x)\frac{d^{k+j}}{dx^{k+j}}u^\varepsilon(x)+\sum_{i=1}^{k}a_i(x)\frac{d^i}{dx^i}u^\varepsilon(x)=h(x). \qquad (1)$$

$$\frac{d^i}{dx^i}u^\varepsilon(x)\Big|_a=f_i \qquad (i=0, 1, 2, \ldots, k_1-1, k_1, \ldots, k_1+l_1-1, k_1+k_2=k),$$
$$\frac{d^j}{dx^j}u^\varepsilon(x)\Big|_b=g_j \qquad (j=0, 1, 2, \ldots, k_2-1, k_2, \ldots, k_2+l_2-1, l_1+l_2=l).$$

Card 1/3

Boundary value problems with...

The following theorem is presented: If there is an unambiguous solution $u^0(x)$ of the equation $L_0u^0(x) = \sum_{i=1}^{k} a_i(x)d^iu^0(x)/dx^i = h(x)$, which satisfies the boundary conditions

$d^iu^0(x)/dx^i|_a = f_i \qquad (i = 1,2,\ldots,k_1 - 1),$

$d^ju^0(x)/dx^j|_b = g_j \qquad (j = 1,2,\ldots,k_2 - 1;\ k_1 + k_2 = k)$

(degenerate boundary value problem A_0), and if the roots of the equation

$a_{k+l}(x)\,\lambda^l + a_{k+l-1}(x)\,\lambda^{l-1} + \ldots + a_k(x) = 0$

fulfill certain conditions, then there is an unambiguous solution $u_\varepsilon(x)$ of the boundary value problem A_ε, which tends to $u^0(x)$ for $\varepsilon \to 0$. M. I. Vishik and L. A. Lyusternik (UMN 12, no. 5 (1957)) are referred to. There are 4 references: 1 Soviet and 3 non-Soviet. The two references to English-language publications read as follows: G. D. Birkhoff, On the asymptotic character in the solutions of certain linear differential equations, containing a parameter, Trans. Amer. Math. Soc. 9 (1908); H. L. Turritin,

Card 2/3

33635
S/042/62/017/001/005/005
B112/B108

Boundary value problems with...

Asymptotic expansions of solutions of systems of ordinary linear differential equations containing a parameter, Contributions to the theory of nonlinear oscillations, V, 11, Princeton, 1952.

SUBMITTED: September 25, 1958

4

Card 3/3

h20hh

S/207/62/000/004/003/006
I028/I242

24,4300

AUTHOR: Shabat, A.B. (Novosibirsk)

TITLE: A pattern of planar fluid flow in the presence of bottom trenches

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no.4, 1962, 68-80

TEXT: The flow in a region D $\{y > y(x)\}$ is considered, where $y = y(x)$ is the equation of the line L, smooth everywhere except at two points a_1 and a_2, where the direction of the tangent has a discontinuity. An arc γ, connecting a_1 and a_2, is drawn inside D. This arc divides D into a finite region D_1, limited by γ and L_1 (L_1 = the part of L connecting a_1 and a_2), and a

Card 1/4

S/207/62/000/004/003/006
I028/I242

A pattern of planar fluid flow...

region D_2. The distribution of pressure in the region D_1 for a given L is examined under the assumption that: a) the motion D_2 is vortex-free, while in D_1 is has a constant vortex ω, b) L and γ are stream lines, c) the velocities of both flows coincide along γ. It is established that the pressure in D_1 is less than in D_2, attaining a minimum either on the boundary of D_1 or on an internal stationary point b (where u = v = 0). It is shown that for every analytic arc forming with L_2 finite angles $\alpha_i \pi$ and $\alpha_i \pi$ $(0 < \alpha_i < 1)$, there exists a $\omega_0 > 0$ such that for every $\omega \geq \omega_0$ there exists a $L_1(\omega)$ satisfying the above assumptions. For the special case that L_2 (the part of L excluding L_1) is the real axis without the segment (-1,+1), while γ is a circular arc forming the angle $\alpha_1 \pi = \alpha_2 \pi = \alpha \pi$, there exists a $\omega_1 > 0$ such that for all $\omega > \omega_1$ there exists a

Card 2/4

S/207/62/000/004/003/006
I028/I242

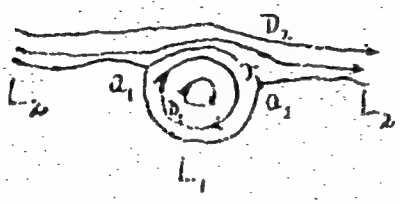


Figure 1

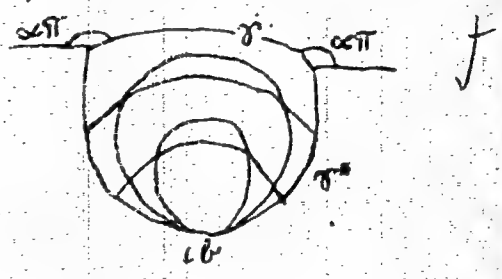


Figure 6

Card 3/4

...pattern of planar fluid flow...

solution $L_1(\omega)$, while no solution exists for $\omega < \omega_1$, and that the field of velocities in D_1 has only one stationary point, located on the straight line $x = 0$. There are 7 figures.

SUBMITTED: March 12, 1962

Card 4/4

SHABAT, A.B.

Two sewing problems. Dokl. AN SSSR 150 no.6:1242-1245 Je '63.
(MIRA 16:8)

1. Institut gidrodinamiki Sibirskogo otdeleniya AN SSSR.
Predstavleno akademikom M.A.Lavrent'yevym.
(Fluid mechanics)

L 18732-63 EPA(b)/EWT(1)/EPF(n)-2/BDS/T-2 AFFTC/ASD/SSD Pd-4/ 69
Pu-4
ACCESSION NR: AP3006119 S/0207/63/000/004/0003/0016

AUTHOR: Krasovskiy, Yu. P.; Lavrent'yev, M. A.; Moiseyev, N. N.; Ter-Krikorov, A. M.; Shabat, A. B. (Novosibirsk, Moscow)

TITLE: Mathematical problems of the hydrodynamics of a liquid with free boundaries

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4, 1963, 3-16

TOPIC TAGS: liquid-motion theory, free boundary, free-stream flow, discontinuous flow, wave phenomenon, standing wave, three-dimensional flow, Froude number, gravitational wave, Cauchy-Poisson wave

ABSTRACT: The article reviews Soviet publications of the last four years dealing with investigations in the theory of the motion of a liquid with free boundaries. Data available from the authors' survey reports presented at the IV Vsesoyuzny*y matematicheskiy s"yezd (4th All-Union Mathematical Congress) in Moscow in 1958 are used in this paper. New models of free-stream and discontinuous flows are presented and discussed. Approximate methods for investigating wave phenomena, based on the asymptotics of solutions, are reviewed, and exact solutions of problems related to the theory of gravitational waves are analyzed. Attention

Card 1/2

L 18732-63

ACCESSION NR: AP3006119

is directed to the basic problems of the theory of waves, such as those of flows with Froude numbers less than unity in the case of flow past an obstacle, of the theory of waves "in the large," of the theory of three-dimensional flows, and of the complex theory of unsteady waves, for example, periodic (standing) and Cauchy-Poisson waves, for which there is still no rigorous method. Orig. art. has: 12 figures and 13 formulas.

ASSOCIATION: none

SUBMITTED: 10Apr63 DATE ACQ: 11Sep63 ENCL: 00

SUB CODE: AI NO REF SOV: 026 OTHER: 003

Card 2/2

SHABAT, A.B.

One property of solutions to elliptic equations of the second order. Dokl. AN SSSR 163 no.2:303-305 Jl '65. (MIRA 18:7)

1. Institut gidrodinamiki Sibirskogo otdeleniya AN SSSR. Submitted January 4, 1965.

GOL'DSHTIK, M.A.; SHABAT, A.B. (Novosibirsk):

"A model of incompressible flow with separation."

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

SHABAT, A.B.

Removability of level sets from solutions of elliptic equations.
Dokl. AN SSSR 160 no.5:1032-1035 F '65. (MIRA 18:2)

1. Institut gidrodinamiki Sibirskogo otdeleniya AN SSSR. Submitted July 21, 1964.

[illegible], N. P.

Ob obobshchennykh resheniyakh odnoy sistemy uravneniy v chastnykh proizvodnykh. Matem. sb., 17 (59), (1945) 183-89.

So: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.
Markushevich, A. I.
Rashevskiy, P. K.
Moscow-Leningrad, 1948

SHABAT, B.V.

*Fuks, B. A., and Šabat, B. V. Funkcii kompleksnogo peremennogo i nekotorye ih priloženiya. [Functions of a Complex Variable and Some of Their Applications]. Gosudarstv. Izdat. Tehn.-Teor. Lit., Moscow-Leningrad, 1949. 383 pp.

This is a rather elementary introductory text which does not discuss theoretical details, but treats in a very detailed manner such topics as evaluation of integrals and special conformal mappings, with a profusion of applications to problems in electrostatics, hydrodynamics and heat flow.

R. P. Boas, Jr. (Evanston, Ill.).

Source: Mathematical Reviews, Vol 12, No. 2.

SHABAT, B. V.

"Cauchy's Theorem and Formula for Quasi-Conformal Reflexions of Linear Classes," Dok AN SSSR, 69, No 3, 1949.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 627 - I

BOOK Call No.: AF 497335

Authors: LAVRENT'YEV, M. A. and SHABAT, B. V.

Full Title: METHODS OF THE THEORY OF FUNCTIONS OF A COMPLEX VARIABLE

Transliterated Title: Metody teorii funktsiy kompleksnogo peremennogo

PUBLISHING DATA

Originating Agency: None

Publishing House: State Publishing House of Technical and Theoretical Literature

Date: 1951 No. pp.: 606 No. of copies: 10,000

Editorial Staff

Editors: Academician M. V. Keldysh, and Yu. K. Solntsev

Contributors: A. V. Bitsadze and I. G. Aramovich

PURPOSE: Approved by the Ministry of Higher Education of the USSR as a textbook for students in engineering, mechanico-mathematical and physico-mathematical departments of state universities who have sufficient mathematical knowledge.

TEXT DATA

Coverage: In the preface, the authors state that the existing full courses of the theory of functions of a complex variable either presuppose readers specializing in mathematics and are difficult for non-mathematicians, or present only the elements of the theory. Their book, they say, treats the subject mainly in its practical application to physical and technical problems. The reader is expected to be versed in the fundamental course of mathematical analysis, e.g., the first two volumes of V. I. Smirnov's Kurs vysshey matematiki (1949), and G. M. Fikhtengol'ts'

SHABAT, B. V.

USSR/Mathematics - Quasiconformal 1 Aug 53

"Behavior of Quasiconformal Representation at an Isolated Point," P. P. Belinskiy

DAN SSSR, Vol 91, No 4, pp 709-710

Presents a theorem which is an essential improvement over the Wittich-Teichmueller theorem (Math Z. 51:6, 278 (1949)) and which generalizes the results of B. V. Shabat (Matem Sbornik, 17(59):2, 193 (1946)) on the differentiability of a quasiconformal reflection to the case of the fulfilment of the Helder integral condition. Namely, proves the following theorem: If

272T63

$\iint [p(z)-]\cdot/z/^{-2}ds_z$ is finite over the interval $0 < /z/ \leq 1$, where ds_z is an element of area in the z-plane, then there exists a limit $w = w_o$ $(z \to 0)$ and the function $w = f(z)$ is monogenic at point z_o.
Presented by Acad M. A. Lavrent'yev 23 May 53.

HALPERIN, Israel; AGRANOVICH, M.S. [translator]; SHILOV, G.Ye., redaktor; SHABAT, B.V., redaktor; BELEVA, M.A., tekhnicheskiy redaktor

[Introduction to the theory of distributions. Translated from the English] Vvedenie v teoriiu obobshchennykh funktsii. Perevod s angliiskogo M.S.Agranovicha. Pod red. G.E.Shilova. Moskva, Izd-vo inostrannoi lit-ry, 1954. 61 p. (MLRA 8:4)
(Functional analysis)

SHABAT, B.V.

MANDELBROJT, S.; VIDENSKIY, V.S.,[translator] GONCHAROV, V.L., redaktor; SHABAT, B.V., redaktor; IL'IN, B.M., tekhnicheskiy redaktor.

[Adherent series. Regulatization of sequences. Applications. Translated from the French] Primykaiushchie riady. Reguliarizatsiia posledovatel'nostei. Primeneniia. Perevod s frantsuzskogo V.S. Videnskogo. Pod red. V.L. Goncharova. Moskva, Izd-vo inostrannoi lit-ry, 1955. 267 p. (MLRA 8:11)
(Series) (Functions)

SABAT, B. V.

3

Sabat, B. V. On mappings realizable as solutions of a Carleman system. Uspehi Mat. Nauk (N.S.) 11 (1956), no. 3(69), 203–206. (Russian)

The author considers the elliptic system of first order partial differential equations

$$u_x - v_y = au + bv, \quad u_y + v_x = cu + dv. \tag{1}$$

This system could also be written in the complex form

$$w_{\bar{z}} = Aw + B\bar{w},$$

where $w = u + iv$, and A, B are complex functions. He remarks that while certain properties of analytic functions have been extended to solutions of (1) by Carleman, Vekua and the reviewer, solutions of (1) do not have the geometric properties of analytic functions. This is illustrated by constructing suitable counter-examples. [The reviewer remarks that if one associates with every solution w of (1) a function $\omega = \phi + i\psi$ so that $w = \phi F + \psi G$, where F, G are two particular solutions of (1), then the function ω is interior and quasi-conformal. For functions ω an extension of Riemann's metric theorem is known to hold. [For more precise statements and references see Bers, Bull. Amer. Math. Soc. 62 (1956), 291–331; MR 18, 470].]

L. Bers (New York, N.Y.).

1-F\W

SHABAT, B.V

SUBJECT USSR/MATHEMATICS/Theory of functions CARD 1/2 PG - 522
AUTHOR ŠABAT B.V.
TITLE On an analogue of the Riemannian theorem for systems of linear hyperbolic differential equations.
PERIODICAL Uspechi mat.Nauk 11, 5, 101-105 (1956)
reviewed 1/1957

Let be given the linear hyperbolic system

$$(1)\qquad \begin{cases} v_y = a(x,y)u_x + b(x,y)u_y \\ v_x = d(x,y)u_x + c(x,y)u_y \end{cases} \qquad ac + \left(\frac{b-d}{2}\right)^2 > 0.$$

The author formulates some assertions on the existence and uniqueness of schlicht mappings which are defined by solutions of (1). The author treats in detail the case of constant coefficients which, by affine transformation of the (x,y)-plane and the (u,v)-plane, can be reduced to the consideration of the system

$$(2)\qquad u_x = v_y, \quad u_y = v_x.$$

If $f(z) = u(x,y) + iv(x,y)$ is a solution of (2) with a functional determinant not vanishing in a region D, then the mapping $w = f(z)$ is called "conformal" in D.

Shabat, B.V.

42-6-13/17

AUTHOR: SHABAT, B.V.

TITLE: The Geometric Sense of the Notion of Ellipticity (Geometricheskiy smysl ponyatiya ellipticheskosti)

PERIODICAL: Uspekhi Matematicheskikh Nauk, 1957, Vol.12, Nr.6, pp.181-188 (USSR)

ABSTRACT: Writing the linear homogeneous system

(1) $v_y = au_x + bu_y, \quad -v_x = du_x + cu_y$

in the complex form

$$\nabla v = \frac{(a+c)i+(b-d)}{2} \nabla u + \frac{(a-c)i-(b+d)}{2} \overline{\nabla} u$$

with the gradients $\nabla u = u_x + iu_y$, $\nabla v = v_x + iv_y$, $\overline{\nabla} u = u_x - iu_y$ etc., then the ellipticity of (1) means that ∇u and ∇v turn always to the same direction. Or: the gradients of u and v can be collinear only then if they vanish.
For nonlinear systems the author gives a similar (more complicated) interpretation of the notion "elliptic", here it is a certain property of monotony too.
Finally the systems being elliptic in the sense of Petrovskiy and in the sense of Lavrent'ev are compared.

Card 1/2

The Geometric Sense of the Notion of Ellipticity 42-6-13/17

Theorem: If $F_i(u_x,u_y,v_x,v_y) = 0$, $i=1,2$, is elliptic in the sense of Lavrent'ev and if $\frac{\partial(F_1,F_2)}{\partial(v_x,v_y)} \neq 0$, then $F_i = 0$ is elliptic in the sense of Petrovskiy too.

Theorem: Given the system $F_i(u_x,u_y,v_x,v_y) = 0$ elliptic in the sense of Petrovskiy. Let $\frac{\partial(F_1,F_2)}{\partial(v_x,v_y)} \neq 0$, let the functional determinant of the solutions vanish (without changing the sign) only with the partial derivatives; let the system be defined in the neighborhood of $u_x = 0$ and $u_y = 0$. Then the system is elliptic in the sense of Lavrent'ev too.

Five Soviet and 1 foreign references are quoted.

SUBMITTED: October 8, 1956
AVAILABLE: Library of Congress

Card 2/2

SABAT, B. V.

SUBJECT USSR/MATHEMATICS/Differential equations CARD 1/3 PG - 845
AUTHOR SABAT B.V.
TITLE Examples of the solution of the Dirichlet problem for equations of the mixed type.
PERIODICAL Doklady Akad.Nauk 112, 386-389 (1957)
reviewed 6/1957

Let be given the equation of hyperbolic type

$$(1) \qquad \frac{\partial^2 u}{\partial x^2} - \frac{\partial^2 u}{\partial y^2} = 0$$

and the domain D which is bounded by the line $[0,1]$ of the x-axis and by the curve L : $y = -\gamma(x)$. Here let $y(x)$ be two times differentiable and let

$\gamma(x) > 0$ for $0 < x < 1$; $\gamma(0) = \gamma(1) = 0$; $|\gamma'(x)| \leq 1$ (= only in isolated points).

Let be given $F_1(x)$ on $[0,1]$ and $F_2(x)$ on L, both two times differentiable and $F_1(0) = F_2(0)$, $F_1(1) = F_2(1)$. The author seeks a two times differentiable function $u(x,y)$ which satisfies (1) in D and assumes the values $F_1(x)$ and

$F_2(x)$ on $[0,1]$ and L.

Theorem: This Dirichlet problem for (1) has a continuum of solutions which in general for $(x,y) \to (0,0)$ have no limit value. If there exists the limit value, then the solution is unique.
Let now the equation of mixed type

$$(2) \qquad \frac{\partial^2 u}{\partial x^2} + \operatorname{sign} y \cdot \frac{\partial^2 u}{\partial y^2} = 0$$

be given. Let D consist of the upper semicircle D_1 with the diameter $[0,1]$ and the domain D_2 which is bounded by L (described above). (2) is elliptic in D_1 and hyperbolic in D_2. Let the solution of (2) be a function $u(x,y)$ which is continuous in D with its derivatives of first order and which has second derivatives for $y \neq 0$ which satisfy (2).
Theorem: If L, apart from the above described condition, still satisfies the condition

$$y'(x) \leq \frac{y(x)}{x-x^2+y^2(x)} \qquad 0 \leq x \leq 1 \qquad \text{(equality only in isolated points),}$$

then the Dirichlet problem for (1) has at most one solution in the class of functions being continuous in D.
Consider (2) in the half-plane $y>-h$ $(h>0)$. Boundary values are given on $y = -h$, they are two times differentiable and satisfy with the derivative of first order the Hölder condition in infinity (with the exponent $\alpha < 1$).
Theorem: The Dirichlet problem for (2) has a continuum of solutions for every h. By the additional condition, that for $x \to -\infty$ the derivative of the solution has a limit value, the solution becomes unique. The author considers still one further example.

LAVRENT'YEV, M.A., akademik; SHABAT, B.V.

Geometric properties of solutions of nonlinear systems of partial differential equations. Dokl. AN SSSR 112 no.5:810-811 F '57.
(Differential equations, Partial) (MLRA 10:4)

16(1) PHASE I BOOK EXPLOITATION SOV/1164

Lavrent'yev, Mikhail Alekseyevich and Shabat, Boris Vladimirovich

Metody teorii funktsiy kompleksnogo peremennogo (Methods in the Theory of a Complex Variable) 2d. ed., rev. Moscow, Fizmatgiz, 1958. 678 p. 25,000 copies printed.

Ed.: Smolyanskiy, M.L.; Tech. Ed.: Gavrilov, S.S.

PURPOSE: This book is intended for readers interested in the application to physics and engineering problems of the theory of functions of a complex variable. It can be used as a textbook by students of the physics, mechanico-mathematics and physicomathematics faculties of vtuzes and universities.

COVERAGE: The basic concepts of the theory of functions of a complex variable are given in condensed form. Only those methods of the theory of functions of a complex variable which are of great value in applications are presented. Considerable attention is given to conformal mapping and boundary value problems. Many special functions of the theory of a complex variable which are of great importance in physics and engineering are analyzed and fundamentals of operational analysis are given.

Card 1/10

Theoretical presentations are supported by many illustrative examples. Many applications of the theory of functions of a complex variable to various physics and engineering problems are given. The author thanks Academician M.V. Keldysh, A.V. Bitsadze, I.G. Aramanovich, Kim Sen Yen, [initials not given] Ipatov, [initials not given] Taich, G. Yu. Stepanov, M.A. Yevgrafov, and N.N. Moiseyev for their help in preparing the book. References are given at the end of each chapter.

TABLE OF CONTENTS:

AUTHORS: Gel'fond, A.O., Leont'yev, A.F. and Shabat, B.V. SOV/42-13-6-28/33

TITLE: Aleksey Ivanovich Markushevich (on the Occasion of his 50th Birthday) (Aleksey Ivanovich Markushevich (K pyatidesyatiletiyu so dnya rozhdeniya))

PERIODICAL: Uspekhi matematicheskikh nauk, 1958, Vol 13, Nr 6, pp 213-220 (USSR)

ABSTRACT: This is a brief account of the life of A.I.Markushevich: born in 1908 at Petrozavodsk, studied till 1930 under Romanovskiy at Tashkent; aspirant under Lavrent'yev at Moscow. Candidate dissertation on polynomial approximation of analytic functions in 1934. Since 1938 docent at the Moscow State University. Doctor dissertation in 1944 on approximations and expansions of functions in series. 1950 vice-president of the Academy of Pedagogical Sciences. 1958 first deputy of the minister of education of the RSFSR (Russian Soviet Federated Socialist Republic). His pupils are: N.A.Davydov, G.Ts.Tumarkin, S.Ya. Khavinson. There follows a list of 83 publications (1928-1957) and a photo of Markushevich.

Card 1/1

Shabat, B.V

16(1) PHASE I BOOK EXPLOITATION SOV/2336

Fuks, Boris Abramovich, and Boris Vladimirovich Shabat

Funktsii kompleksnogo peremennogo i nekotoryye ikh prilozheniya (Functions of Complex Variables and Some of Their Applications) 2d ed. Moscow, Fizmatgiz, 1959. 376 p. (Series: Fiziko-Matematicheskaya biblioteka inzhenera) 20,000 copies printed.

Ed.: M. L. Smolyanskiy; Tech. Ed.: Ye. A. Yermakova.

PURPOSE: This book is intended for students and Aspirants of vtuses and also for engineers and scientists working on the application of mathematics to physics and mechanics.

COVERAGE: This book discusses in detail the fundamental concepts of the theory of functions of a complex variable. Among the topics covered are complex numbers, analytic functions, conformal mapping, elementary functions, and regular functions. Various applications of the theory are also discussed, such as applications to plane vector fields, to the theory of residues, representation of functions by line integrals, etc. The book places great emphasis on practical applications of the theory, and many examples and

Card 1/9

problems are included. No personalities are mentioned. There are no references.

TABLE OF CONTENTS:

Functions of Complex (Cont.) SOV/2336

Card 3/9

Functions of Complex (Cont.) SOV/2336

Card 7/9

SOV/2336

Functions of Complex (Cont.)

AVAILABLE: Library of Congress

LK/ec
11-20-59

Card 9/9

16(0)

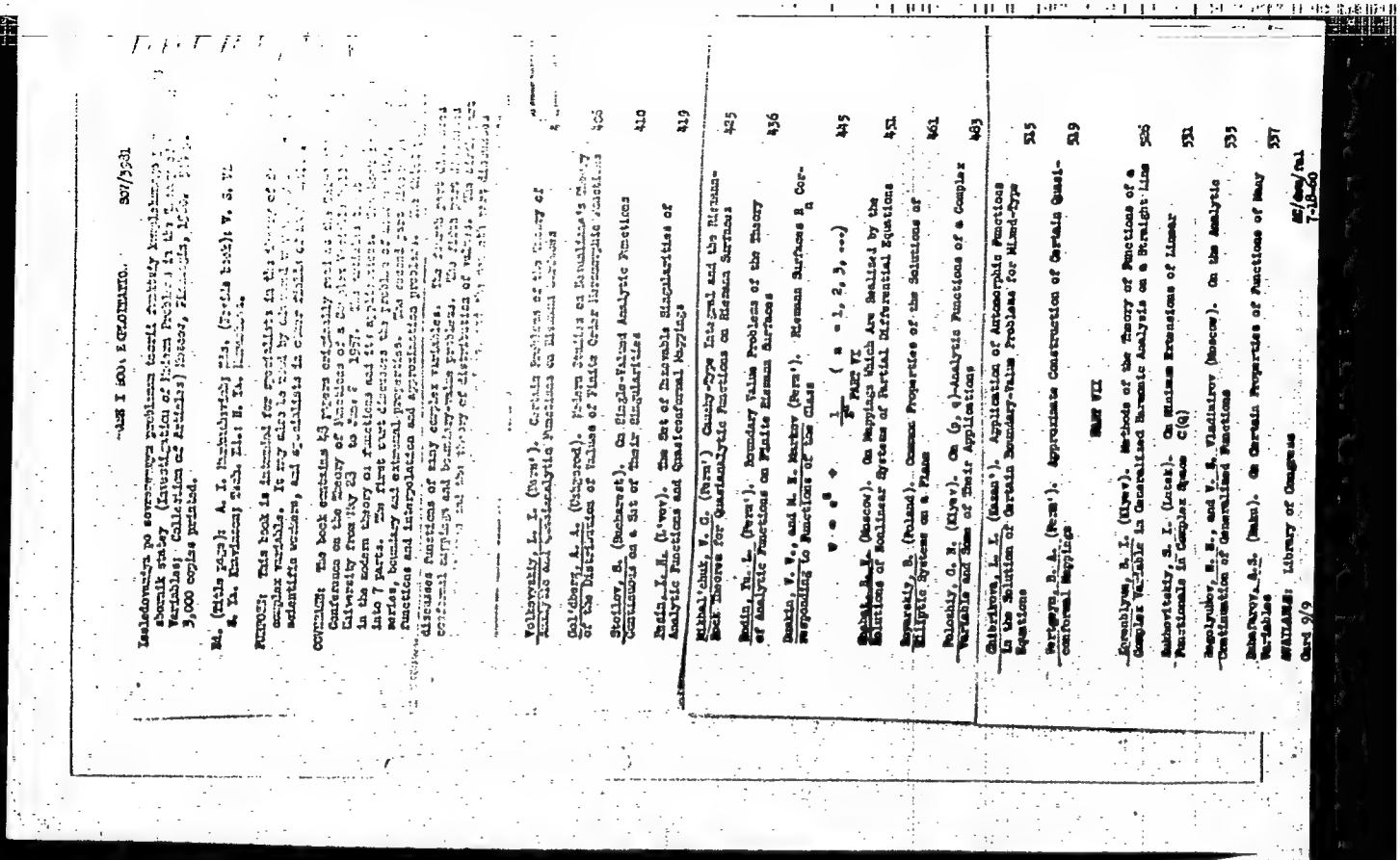
PHASE I BOOK EXPLOITATION SOV/3177

Matematika v SSSR za sorok let, 1917-1957. tom 1: Obzornyye stat'i (Mathematics in the USSR for Forty Years, 1917-1957). Vol 1: Review Articles) Moscow, Fizmatgiz, 1959. 1002 p. 5,500 copies printed.

Eds: A. G. Kurosh, (Chief Ed.), V. I. Bityutskov, V. G. Boltyanskiy, Ye. B. Dynkin, G. Ye. Shilova, and A. P. Yushkevich; Ed. (Inside book): A. P. Lapko; Tech. Ed.: S. N. Akhlamov.

PURPOSE: This book is intended for mathematicians and historians of mathematics interested in Soviet contributions to the field.

COVERAGE: This book is Volume I of a major 2-volume work on the history of Soviet mathematics. Volume I surveys the chief contributions made by Soviet mathematicians during the period 1917-1957; Volume II will contain a bibliography of major works since 1917 and biographic sketches of some of the leading mathematicians. This work follows the tradition set by two earlier works: Matematika v SSSR za pyatnadtsat' let (Mathematics in the USSR for 15 Years) and Matematika v SSSR za tridtsat' let (Mathematics in the USSR for 30 Years). The book is divided into the major divisions of the field, i.e., algebra, topology, theory of probabilities, functional analysis, etc., and contributions and outstanding problems in each discussed. A listing of some 1400 Soviet mathematicians is included with references to their contributions in the field.



S/020/60/130/06/009/059

~~16(1)~~ 16.5(1)

AUTHOR: Shabat, B.V.

TITLE: The Modulus Method in Space

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 6, pp 1210-1213 (USSR)

ABSTRACT: In the spatial domain D let be given a rectifiable family of curves $\{C\}$ and the measurable non-negative metric $\rho=\rho(P)$, $P\in D$, where $\int_C \rho ds \geq 1$. $M = \inf_{\rho} \int_D \rho^3 d\omega$ is called the modulus of $\{C\}$. Let $\{C_*\}$ be the Q-quasiconformal mapping of $\{C\}$.

Theorem 1: It holds

(1) $$M\{C\}/Q^2 \leq M\{C_*\} \leq Q^2 M\{C\}.$$

Let $\{S\}$ be a squarable family of surfaces in D and $\int_S \rho^2 d\sigma \geq 1$.

$M\{S\} = \inf_{\rho} \int_D \rho^3 d\omega$ is denoted as the modulus of $\{S\}$.

Theorem 2: It holds

(2) $$M\{S\}/Q \leq M\{S_*\} \leq QM\{S\}.$$

The Modulus Method in Space

$\mathcal{G}$ is called extremal if the volume of the domain is identical with the modulus of the considered family of curves and surfaces respectively.

Theorem 3: The extremal metric is determined uniquely up to a set of the volume measure 0.

Theorem 4: If two families with the moduli M_1 and M_2 lie in D_1 and D_2, $D_1 \cap D_2 = 0$ and if there arises a third family in $D=D_1 \cup D_2$ by a union of the first-named families, then for the modulus of this union it holds

(8) $$M \geq M_1 + M_2.$$

Theorem: Let $\{C_1\}$ and $\{C_2\}$ be situated in D_1 and D_2, $D_1 \cap D_2 = 0$. Let every curve of $\{C\}$ consist of a C_1 and a C_2. Then

(9) $$1/\sqrt{M\{C\}} \geq 1/\sqrt{M\{C_1\}} + 1/\sqrt{M\{C_2\}}.$$

For surfaces it holds in the same case

The Modulus Method in Space S/020/60/130/06/009/059

(10) $1/M^2\{S\} \geq 1/M^2\{S_1\} + 1/M^2\{S_2\}$.

The author mentions A.I.Markushevich.
There are 3 references, 2 of which are Soviet, and 1 Swedish.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova (Moscow State University imeni M.V.Lomonosov)

PRESENTED: November 5, 1959, by M.A.Lavrent'yev, Academician

SUBMITTED: October 30, 1959

4

Card 3/3

81698

S/020/60/132/05/20/069

16.3500

AUTHOR: Shabat, B. V.

TITLE: On the Theory of Quasiconformal Mappings in the Space

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 5, pp. 1045-1048

TEXT: A quasiconformal mapping of a domain D in the space is defined to be a homeomorphic mapping $P_* = f(P)$ of this domain which possesses in every point of D continuous partial derivatives and a positive jacobian. The author shows that with the aid of the method developed by him in (Ref.1) it is possible to prove several known theorems due to M. A. Lavrent'yev and M. A. Kreynes on Q-quasiconformal mappings in the space, e. g.:

Theorem 3: There is no Q-quasiconformal mapping of the half space $z > 0$ with the cut $l = \{x = y = 0, 0 < z \leq H\}$ onto the half space $z_* > 0$ (x,y,z cartesian coordinates).

There are 4 theorems. The author mentions K. Andreyan-Kozaku.

Card 1/2

SHABAT, B. V.

Doc Phys-Math Sci - (diss) "Non-linear, hyperbolic, and space problems in the theory of quasi-conformal transformations." Moscow, 1961. 8 pp; (Academy of Sciences USSR, Siberian Division, Joint Academic Council on Physics-Mathematics and Techniques of the Sciences); 250 copies; price not given; bibliography at end of text (28 entries); (KL, 5-61 sup, 171)

AL'FORS, LARS [Ahlfors, Lars], prof.; LIPMAN, Bers, prof.; ZORICH, V.A. [translator]; KIRILLOV, A.A. [translator]; SHABAT, B.V., red.; PLUZHNIKOVA, N.I., red.; PRIDANTSEVA, S.V., tekhn. red.

[Space of Riemann surfaces and quasi-conformal mappings] Prostranstva rimanovykh poverkhnostei i kvazikonformnye otobrazheniia. Pod red. B.V.Shabata. Moskva, Izd-vo inostr.lit-ry, 1961. 176 p. (MIRA 15:1)
(Rieman surface) (Conformal mapping)

BITSADZE, A.V.; MARKUSHEVICH, A.I.; SHABAT, B.V.

Mikhail Alekseevich Lavrent'ev; on his 60th birthday. Usp. mat. nauk 16 no.4:211-221 Jl-Ag '61. (MIRA 14:8)
(Lavrent'ev, Mikhail Alekseevich, 1900-)

20629
S/020/61/136/006/005/024
C 111/ C 333

16.3500

AUTHOR: Shabat, B. V.

TITLE: On the notion of derivative system according to M. A. Lavrent'yev

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 136, no. 6, 1961, 1298-1301

TEXT: Let the system

$$F_i(x,y,u,v,u_x,u_y,v_x,v_y) = 0 \quad (i = 1,2), \qquad (1)$$

be given. Let $z_0 = x_0 + iy_0$ be a point in which the functional determinant of the mapping, which is effected by the solution of (1), is different from zero. In every such point z_0 the linear principal part of this mapping transforms the parallelogram with the base V_β, height W_β and angle θ_β, which is inclined to the x-axis under the angle α_β, into a square with side 1, the base of which forms the angle β with the u-axis. The parameters V_β, W_β, α_β, θ_β are called characteristics of the mapping. Here it holds

Card 1/5

On the notion of derivative system ...

$$u_x = \left(\frac{\operatorname{tg}\alpha + \operatorname{tg}\theta}{V_\beta \operatorname{tg}\theta} + \frac{\operatorname{tg}\alpha \operatorname{tg}\beta}{W_\beta}\right)\cos\alpha\cos\beta, \quad u_y = \left(\frac{\operatorname{tg}\alpha \operatorname{tg}\theta - 1}{V_\beta \operatorname{tg}\theta} - \frac{\operatorname{tg}\beta}{W_\beta}\right)\cos\alpha\cos\beta,$$

$$v_x = \left(\frac{\operatorname{tg}\alpha + \operatorname{tg}\theta}{V_\beta \operatorname{tg}\theta}\operatorname{tg}\beta - \frac{\operatorname{tg}\alpha}{W_\beta}\right)\cos\alpha\cos\beta, \quad v_y = \left(\frac{\operatorname{tg}\alpha \operatorname{tg}\theta - 1}{V_\beta \operatorname{tg}\theta}\operatorname{tg}\beta + \frac{1}{W_\beta}\right)\cos\alpha\cos\beta. \tag{2}$$

If this is substituted into (1) and solved for W_β and θ_β, then one obtains

$$W_\beta = W_\beta(x,y,u,v,V_\beta,\alpha_\beta), \theta_\beta = \theta_\beta(x,y,u,v,V_\beta,\alpha_\beta). \tag{3}$$

Let $\beta = 0$ and $V_0 = V, \alpha_0 = \alpha$ etc. Hereby (3) is transformed into

$$W = W(x,y,u,v,V,\alpha) \quad \theta = \theta(x,y,u,v,V,\alpha). \tag{4}$$

M. A. Lavrent'yev (Ref.1: Matem. sborn., 21 (63), 285 (1947)) has shown that for an arbitrary solution of (1) the magnitudes $P = \ln V$ and α satisfy the system

Card 2/5

On the notion of derivative system ...

$$\frac{\partial P}{\partial v} = a_1 \frac{\partial P}{\partial u} + a_2 \frac{\partial \alpha}{\partial u} + a_3, \quad \frac{\partial \alpha}{\partial v} = b_1 \frac{\partial P}{\partial u} + b_2 \frac{\partial \alpha}{\partial u} + b_3, \qquad (5)$$

which is denoted as the derivative system, and the coefficients of which are given by

$$a_1 = \frac{\partial W}{\partial V} \operatorname{ctg}\theta - \frac{W}{\sin^2\theta}\frac{\partial \theta}{\partial V}, \quad a_2 = \frac{1}{V}\left(\frac{\partial W}{\partial \alpha}\operatorname{ctg}\theta - \frac{W}{\sin^2\theta}\frac{\partial \theta}{\partial \alpha} - W\right),$$
$$b_1 = \frac{\partial W}{\partial V}, \quad b_2 = \frac{1}{V}\left(\frac{\partial W}{\partial \alpha} + W\operatorname{ctg}\theta\right), \qquad (6)$$
$$a_3 = \left(\frac{1}{V}\frac{\partial W}{\partial u} + \frac{\partial W}{\partial s}\right)\operatorname{ctg}\theta - \left(\frac{1}{V}\frac{\partial \theta}{\partial u} + \frac{\partial \theta}{\partial s}\right)\frac{W}{\sin^2\theta}, \quad b_3 = \frac{1}{V}\frac{\partial W}{\partial u} + \frac{\partial W}{\partial s}$$

where $\frac{\partial}{\partial s} = \frac{\partial}{\partial x}\cos\alpha + \frac{\partial}{\partial y}\sin\alpha$.

The author gives a new proof for the following improved version of the theorem of M. A. Lavrent'yev (Ref.1): For systems (1) for which

Card 3/5

On the notion of derivative system ... S/020/61/136/006/005/024
C 111/ C 333

the functions $W(x,y,u,v,V,\alpha)$ and $\Theta(x,y,u,v,V,\alpha)$ from (4) are continuously differentiable in a certain domain (except the systems for which it holds

$$\frac{\partial W_\beta}{\partial V_\beta} = \frac{V^2 \partial W}{V_\beta^2 \partial V} \quad (7)$$

the positivity of the derivative $\partial W_\beta / \partial V_\beta$, for every β, $0 < \beta < 2\pi$, is equivalent to the ellipticity of the derivative system (5) in classical sense and to the condition $b_1 = \partial W / \partial V > 0$.

By an example the author shows that the exceptional case mentioned in the theorem can really occur.

Furthermore the author proves:

Theorem: Assume that the system (1) contains explicitly no coordinates. The right sides of the equations (4) are assumed to be twice continuously differentiable in the entire open

Card 4/5 $\frac{1}{V} e^{-i\alpha}$ - plane (so-called hodograph plane).

SHABAT, B.V.

Conference on the Theory of Analytic Functions. Usp. mat. nauk 18 no.2:201-206 Mr-Ap '63. (MIRA 16:8)
(Functions, Analytic)

:UKS, Boris Abramovich; SHABAT, Boris Vladimirovich; BAYEVA, A.P., red.

[Functions of complex variables and some of their applications] Funkt ii kompleksnogo peremennogo i nekotorye ikh prilozheniia. Izd.3. Moskva, Izd-vo "Nauka," 1964. 387 p.
(MIRA 17:6)

LAVRENT'YEV, Mikhail Alekseyevich; SHABAT, Boris Vladimirovich; SMOLYANSKIY, M.L., red.

[Methods in the theory of functions of complex variables] Metody teorii funktsii kompleksnogo peremennogo. Izd.3., ispr. Moskva, Nauka, 1965. 716 p. (MIRA 18:6)

SHABAT, I.B.

Obligations have been fulfilled. Kons. i ov. prom. 16 no.11:4 N '61. (MIRA 14:11)

1. Odesskiy konservnyy kombinat.
(Odessa--Canning industry)

SHABAT, M.V., inzhener.

Improved base line instrument of the Central Scientific Research Institute of Geodesy, Aerial Photography, and Cartography. Sbor. st.po geod.no.1:40-48 '51. (MIRA 9:7)
(Base measuring)

SHABAT, M.V.

Study of the temperature computation errors of invar tapes.
Sbor.st.po geod. no.3:67-75 '53. (MLRA 9:6)
(Base measuring) (Invar)

(4)

AUTHOR: Shabat, M. V. SOV/6-59-9-4/19

TITLE: Duplicate Measurement of the Basis of Nesvetay

PERIODICAL: Geodeziya i kartografiya, 1959, Nr 9, pp 23-25 (USSR)

ABSTRACT: The Nesvetay 1st order base (near the town of Rostov) was surveyed for the first time in 1948, and for the second time in 1955 by the collaborators of the Meteorologicheskaya laboratoriya TsNIIGAiK (Meteorological Laboratory of the TsNIIGAiK). 7 invar wires, a theodolite TN-40, a dumpy level of Zeiss, 3 centering devices of the Malyshev-system, and an invar band 6 meters long, were used in 1955. The repair of the invar wires is pointed out here. The survey was made from the end of August to the beginning of September 1955 in clear hot weather. The execution of the survey is pointed out in brief, and the results are shown in the table. The second survey showed that the measurement of the base was made with high accuracy both in 1948 and 1955. The investigations revealed that it is more convenient to wind up the invar wires on invar drums than on aluminum drums. There are 3 tables.

Card 1/1

SHABAT, Ye.V.

Give more attention to problems in utilizing, operating, and repairing medical equipment and apparatus. Zdrav.Ros. Feder. 2 no.12:10-13 D'58 (MIRA 11:12)

1. Nachal'nik Upravleniya raspredeleniya material'nykh fondov Ministerstva zdravookhraneniya RSFSR.
(MEDICAL INSTRUMENTS AND APPARATUS)

SHABATA, V., kand. med. nauk

Determination of nutritional standards for pregnant and parturient women. Akush. i gin. no.6:77-79 N-D '63. (MIRA 17:12)

1. Iz Instituta okhrany materi i rebenka v Prage.

SHABATE, B.

Chabate, B. Sur les solutions généralisées des systèmes elliptiques linéaires. Rec. Math. [Mat. Sbornik] N.S. 17(59), 193–210 (1945). (Russian. French summary) [MF 16668]

Envisageons le système elliptique d'équations aux dérivées partielles:

(1) $a_1u_x+a_2u_y-v_y=0, \quad a_3u_x+a_4u_y-v_x=0,$

$a_1a_4-(a_2+a_3)^2/4>0$. L'auteur étudie les couples de fonctions $u(z)$ et $v(z)$, définies dans le domaine simple D du plan $z=x+iy$ et qui y possèdent les propriétés suivantes. (1) Les fonctions u et v possèdent presque partout une différentielle totale au sens de Stolz et vérifient presque partout (1). (2) Les dérivées partielles de premier ordre de u et v sont de carré sommable. (3) Soient les segments $x=x_0$ ou $y=y_0$ intérieurs à D; sauf pour un ensemble dénombrable de ces segments, $f(z)=u+iv$ transforme tout ensemble parfait, de mesure linéaire nulle, situé sur un tel segment, en un ensemble de mesure nulle. (4) La représentation $w=f(z)$ sur le plan w est continue, ouverte, ne transformant pas un continu distinct d'un point en un point.

Cela étant, l'auteur construit une formule de Green pour exprimer u et v; ce mode de représentation des inconnues lui permet de relier les propriétés de continuité de u et v à celles des $a_i(z)$. En utilisant et en adaptant convenablement les raisonnements de E. Hopf [Math. Z. 34, 194–233 (1931)], l'auteur parvient à l'énoncé suivant: si les $a_i(z)$ admettent dans D des dérivées partielles d'ordre m, vérifiant dans D une condition de Hölder d'exposant δ, les dérivées partielles d'ordre $m+1$ de toute solution u, v de (1) existent et vérifient une condition de Hölder d'exposant δ.

L'auteur définit ensuite une classe de correspondances quasi-conformes $w=u+iv$, généralisant celle de M. Lavrentieff [même Rec. 42, 407–423 (1937)]; il vérifie que les fonctions u et v sont alors solutions de (1); la réciproque est vraie. On indique enfin quelques propriétés fonctionnelles de ces correspondances: limitation des coefficients de déformations, critère de compacité des dérivées partielles de u et v.

J. Kravtchenko (Grenoble).

Source: Mathematical Reviews, Vol 8, No. 2

VASIL'YEV, V.G.; MERZLENKO, Yu.F.; MATSKEVICH, N.M.; ZHIVAGO, N.V.; LI CHZHAO-ZHEN' [Li Chao-Jên]; GOLYAKOV, V.A.; SHABATIN, I.V.; BORISENKO, Ye.M.; MIROSHNIKOV, M.V.; USPENSKAYA, N.Yu.; KHEL'KVIST, V.G.; GRATSIANOVA, O.P.; BUDNIKOV, N.B.; BELOV, K.A.; MAKSIMOV, S.P.

Discussion. Trudy VNIGNI no.32:282-336 '60. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut prirodnogo gaza (for Vasil'yev, Zhivago, Khel'kvist). 2. Neftepromyslovoye upravleniye Stavropol'neft' (for Merzlenko). 3. Groznenskiy nauchnoissledovatel'skiy neftyanoy institut (for Matskevich). 4. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. I.M. Gubkina (for Li Chzhao-zhen', Uspenskaya). 5. Stavropol'skiy filial Groznenskogo nauchnoissledovatel'skogo neftyanogo instituta (for Golyakov, Shabatin, Borisenko, Miroshnikov). 6. Ministerstvo geologii i okhrany nedr SSSR (for Gratsianova, Budnikov). 7. Glavnyy geolog neftyanogo i gazovogo upravleniya Stavropol'skogo sovnarkhoza (for Belov).

(Caucasus, Northern—Petroleum geology)
(Caucasus, Northern—Gas, Natural—Geology)

SHABATIN, V.

RADIO

Radio-network workers help radio amateurs.
Radio, No. 9, 1952

9. Monthly List of Russian Accessions, Library of Congress, December 1952. UNCLASSIFIED.

SHABATURA, S.V.

Mechanized over-all cleaning of beet seeds. Sakh. prom. 32 no. 7:65-66 Jy '58. (MIRA 11:8)

1. Cherkasskiy sakhsveklotrest.
(Sugar beets)
(Seed-cleaning)

SHABAYEV, V.

V.A.Pukovskii. Mashinostroitel' no.2:40 F '60.
(MIRA 13:5)

(Technological innovations)

KASYMKHODZHAYEV, S.; SIDOROV, K., starshiy instruktor; SHABAYEV, V.

Inspection of red corners is in progress. Sov. profsoiuzy 18 no. 11:34-35 Je '62. (MIRA 15:6)

1. Zaveduyushchiy kul'turno-massovym otdelom Uzbekskogo respublikanskogo soveta profsoyuzov, g. Tashkent (for Kasymkhodzhayev).
2. Gor'kovskiy oblastnoy sovet professional'nykh soyuzov (for Sidorov).
3. Rostovskiy zavod sel'skokhozyaystvennogo mashinostroyeniya (for Shabayev)

(Community centers)

SHABAYEVA, A.

Activities of trade unions. Obshchestv.pit. no.8:43 Ag '59.
(MIRA 12:12)

1. Predsedatel' ob"yedinennogo komiteta profsoyuza Yaltinskogo tresta restoranov.
(Yalta--Restaurants, lunchrooms, etc.--Employees)

"Concerning Certain Biochemical Alterations in the Blood of Patients Suffering from Eczema Who were treated by Prolonged Intermittent Ele p."

Vestnik vererologii i dermatologii (Bulletin of Venerology, Dermatology), No. 1 January-February 1954 (bimonthly), Moscow.

[illegible]

"The Treatment of Eczema with Sleep."

Vestnik venerologii i dermatologii (Bulletin of Venerology Dermatology), No 1, January-February 1954, (biomper), Moscow.

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R001548510009-8"

[redacted], I. N. -- "On Certain Biochemical Shifts in the Blood and Urine in Treating Somatic Patients with Protracted Intermittent Medicinal and Conditioned-Reflex Sleep." Kuybyshev State Medical Inst. Kuybyshev, 1955. (Dissertation for the Degree of Candidate in Medical Sciences)

SO: Knizhnaya Letopis', No. 1, 1956

SHABAYEVA, L.N., kand. med. nauk

Functional state of the adrenals in eczema. Vest. derm. i ven. 33 no.2:81 Mr-Ap '59. (MIRA 12:7)

1. Iz kafedry kozhnykh bolezney Kuybyshevskogo gosudarstvennogo meditsinskogo instituta.
(ADRENAL GLANDS) (ECZEMA)

SHABAYEVA, L. N., kand. med. nauk

State of the vegetative nervous system in patients with eczema. Vest. derm. i ven. no.10:7-8 '61. (MIRA 14:12)

1. Iz kafedry kozhno-venericheskikh bolezney (zav. - prof. A. S. Zenin) Kuybyshevskogo meditsinskogo instituta (dir. A. D. Voronov)

(ECZEMA) (NERVOUS SYSTEM, AUTONOMIC)

SHABAYEVA, L.N., kand.med.nauk

Sweat gland Ribonucleic acid and polysaccharides of the sweat glands in ontogeny. Vest. derm. i ven. 38 no.7:3-7 Jl '64. (MIRA 18:4)

1. Kafedra kozhnykh i venericheskikh bolezney (zav. - prof. A.S.Zenin) Kuybyshevskogo meditsinskogo instituta.

Name: SHABAYEVA, Mariya Fedorovna

Dissertation: The School and teachers of Russia in the first quarter of the 19th century (from the beginning of the century to the uprising of the Decembrists)

Degree: Doc Ped Sci

Affiliation: [not indicated]

Defense Date, Place: 5 Jul 55, Council of Sci Res Inst of Theory and History of Pedagogy, Acad Ped Sci RSFSR

Certification Date: 16 Nov 57

Source: BMVO 24/57

[illegible]

[illegible], [illegible] et al.

History of [illegible]; textbook for pedagogical institutes [illegible] pre-school education
Izd. 2., Moscow, [illegible] Izd-vo, 1955. 375 p. (55-37826)

[illegible]

APPROVED FOR RELEASE: 07/20/2001 CIA-RDP86-00513R001548510009-8"

ROTENBERG, V.A.; SHABAYEVA, M.F.

K. Marx, F. Engels, and V.I. Lenin on technical education. (MIRA 10:10)
Politekh.obuch. no.11:9-17 N '57.
(Technical education) (Lenin, Vladimir Il'ich, 18-1924)
(Marx, Karl, 1818-1883) (Engels, Friedrich, 1820-1895)

3-58-2-25/33

AUTHORS: Gorokhov, V.M., Professor, and Rozhdestvenskiy, B.P. Dotsent

TITLE: A Conference of Instructors in Pedagogics and Psychology (Soveshchaniye prepodavateley pedagogiki i psikhologii)

PERIODICAL: Vestnik Vysshey Shkoly, 1958, # 2, page 78 (USSR)

ABSTRACT: From 17 to 19 Ocotber 1957, a scientific-practical conference of instructors of the chairs of pedagogics and psychology of the universities and pedagogical institutes in the Middle Volga and the Urals region was held in Kazan'. Representatives of 3 universities and 9 pedagogical institutes, directors and chiefs of the teaching sections of secondary schools, collaborators of the Tatarskiy institut usovershenstvovaniya uchiteley (Tatar Institute for the Development of Teachers), and others participated in the conference work.

At the plenary sessions and meetings of the 3 sections - pedagogical, psychological and history of pedagogics - 25 reports on various questions of development of the Soviet school were heard. M.F. Shabayeva, Senior Scientific Collaborator of the APN RSFSR, submitted a report on the theme " The Soviet School and Pedagogics Over the 40 Years of Soviet Power". Candidates of Pedagogical Sciences N.A. Polovnikova

Card 1/2

and A.I. Golubev reported on the organization of polytechnical education in the Tatar and Mordvinian Autonomous Republics. Candidate of Pedagogical Sciences B.P. Rozhdestvenskiy and G.A. Petrova spoke of the organization of aesthetic education in the schools of the Tatar Autonomous Republic; Candidate of Pedagogical Sciences A.A. Vanshteyn discussed the mutual relation between theory and practice in teaching pedagogics.

The Kazan' conference decided to establish a permanent organizational bureau for preparing and conducting conferences.

ASSOCIATION: Kazanskiy pedagogicheskiy institut (Kazan' Pedagogical Institute); Kazanskiy gosudarstvennyy universitet imeni V.I.Ul'yanova (Lenina) (Kazan' State University im.V.I.Ul'yanov (Lenin))

AVAILABLE: Library of Congress

20-114-3-49/60

AUTHORS: Gorbunova, L. I., Shabayeva, Ye. A.

TITLE: Montmorilonite Clays From Deposits of a Carboniferous Layer of the Lower Carboniferous in Tataria. (Montmorillonitovyye gliny iz otlozheniy uglenosnogo gorizonta nizhnego karbona Tatarii)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol 114, Nr 3, pp 631-633 (USSR)

ABSTRACT: In the course of microscopic investigations of the Devonian and Carboniferous deposits of some districts of Baku II, the authors of the paper under review studied, inter alia, the mineralogical composition of the Lower Carboniferous clays from the Romashkinskoye oil area of Tataria : interval 996-1016 m of the Al'met'yev shaft. . These are aleuritic clay units. Coarsely pelitic fraction is predominant (38.9 - 85.1 %). Precolloidal fraction (9.17 - 38. 1 %) plays a subordinate part. Colloidal fraction (5.6 - 12.1 %) is represented to an even lesser degree. From the point of view of their chemical composition, the fractions 0.001 - 0,0002 mm are related to the montmorilonite clays. Also the X-ray analyses of the fractions below 0.0002 mm point to this group of minerals. The

Card 1/2

Montmorilonite Clays From Deposits of a Carboniferous Layer of the Lower Carboniferous in Tataria.

thermograph and the dehydration curve again are characteristic of the same group. The results of thorough investigation permit the conclusion that the rock-forming mineral is a montmorilonite-like mineral with admixture of water-mica. There exist no unambiguous results which would make it possible to attribute the mineral with certainty either to montmorilonite or to beidelite. The ratio $SiO_2 : Al_2O_3 = 4.99 : 1$ is that of montmorilonite, whereas the t^o of the second endothermal reaction (565^o) and the curve of adsorption are those of beidelite. To obtain more precise results, additional investigations are necessary. There are 2 figures, 2 tables and 3 references, all of which are Soviet.

ASSOCIATION: All-Union Scientific Research Institute for Geological Survey of Petroleum (Vsesoyuznyy nauchno-issledovatel'skiy geologorazvedochnyy neftyanoy institut)

PRESENTED: November 12, 1956, by N. M. Strakhov, Member of the Academy
SUBMITTED: October 26, 1956

AUTHORS: Shabayeva, Ye. A., and Gorbunova, L. I. 20-3-37/46

TITLE: A Case of Montmorillonite Replacement by Hydro-Mica in Clays of Middle Carboniferous Deposits of the Saratov Near-Volga Region (Sluchay zameshcheniya montmorillonita gidroslyudoy v glinakh srednekamennougol'nykh otlozheniy Saratovskogo Povolzh'ya).

PERIODICAL: Doklady AN SSSR, 1957, Vol. 116, Nr 3, pp. 484-487 (USSR)

ABSTRACT: Electron microscopical photographs of fine clay fractions of the Bashkir specimen and the Veresyk horizon have shown various stages of diagenetic replacement of a clay mineral by an other one. The initial stage of this replacement is represented in figure 1. The picture reminds externally the replacement process of olivine by serpentine, of biotite by chlorite, etc. The said minerals were carefully identified by the authors. Clear lines of various intensity of montmorillonite and hydro-mica were detected on radiograms of the fractions < 0,001 mm. The electron microscopial investigation is not at variance with the chemical analysis. Consequently the two said minerals may be considered as rock-forming. The electron microscope shows that hydro-mica

Card 1/3

A Case of Montmorillonite Replacement by Hydro-Mica in Clays of Middle Carboniferous Deposits of the Saratov Near-Volga Region

20-3-37/46

was produced from montmorillonite-like mineral in course of the diagenesis. Nobody has stated this before, but it became a question that the process takes place in opposite direction. Only some suggestive remarks concerning the former possibility were enounced. The fixed case seems to indicate that these enouncements prove right and it is in accordance with the results obtained by some authors who obtained hydro-mica by introducing potassium ions in the montmorillonite lattice. Hydro-mica was diagenetically formed in the Volga region, apparently by the interaction of the mineral from the montmorillonite-group with potassium ions which at that time were absorbed by sediments from sea water. There are 3 figures, 2 tables and 9 references, 7 of which are Slavic.

Card 2/3